

AVIATION

JULY 16, 1923

Issued Weekly

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VOLUME
XV

NUMBER
3

SPECIAL FEATURES

AN ITALIAN LIGHT PLANE
AVIATION AND CITY PLANNING
RESULTS OF NATIONAL BALLOON RACE
FOREIGN AIR ARMAMENTS AND THE UNITED STATES

THE GARDNER, MOFFAT CO., INC.
HIGHLAND, N. Y.
225 FOURTH AVENUE, NEW YORK

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JULY 16, 1923

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No. 3

AVIATION

Aerial Armaments

THIS should be great caution used in considering the credit rivalry between France and England. The wide public is not being given to it may have behind it a purpose as yet apparent to the public.

The outstanding facts are not being emphasized. The first and most important in the growing conviction that the assumption of types of warfare is in the air. The second point is, to consider in the present military and naval model of all aircraft activities in practically all countries except England and Italy. Consequently there is a fear that the economic and technical of aircraft will lead to divert the military and naval appropriations to the expansion of the air forces.

General Paul Adrien Massé, between them, "a bomb weighing 4,000 pounds with 2,000 pounds of TNT," weighs only one tenth as now built or likely to be built, if exploded within five hundred feet of the tail," and Admiral Maffiot states that "power dominates in aerial warfare. His power is absolutely dependent upon our power. It can be successfully carried only through the medium of air power," and these opinions are reflected by the distinguished English Admiral Sir Edward J. Adm. Maffiot, Chief of the Bureau of Armaments of the Navy Department, is aware of the changed conditions when he states that "aviation is developing and creating world machines today. The overwhelming armament of France is leading her to dictate terms. She is able to sweep Germany, Norway and hold it in defiance of the power, or action of any other power or power."

Here we have four Admirals, of definitely stating that aviation is dominating future war warfare and Admiral Maffiot, when the subject of appropriations comes up, reveals the fact that only five per cent of the total naval budget is allowed for aircraft. He says "out of these hundred and forty million dollars allotted for maintenance of the Navy, Naval Aviation is allowed less than fifteen million. On this meager appropriation we have managed to struggle along and barely keep existence about". Is it not evident that no naval cycles there is a fear that the development of aircraft may have a disastrous effect on the strength per cent?

The stand-pat naval system has been expressed by Rear Admiral William L. Rodgers, Head of the General Board and Senior Officer on the active list of the navy. Consider his opinion with those above. He maintains the role of aircraft is, saying that "this importance arises which the public has induced an attention arises from their capacity from power to move other vehicles. This importance is greatly reduced when they are opposed by rapidly speedy carriers. When both the have aircraft the role of aircraft as both bulk make to no secondary role. Aircraft can be impeded only when possessed by one side only."

Definitely the Admiral has concerned himself that a "five per cent" naval air force that spends fifteen million dollars is

sufficient to protect the American Navy against any enemy aircraft attack.

When the military point of view is considered, it is more difficult to secure expressed opinions. The statement previously issued in Washington that a recommendation has been made to greatly increase our military air force and have some increasing aircraft programs is encouraging. But it will not assist American aviation if it is not considered in the light of economy. With a million dollars diverted each year to naval military, cavalry, cavalry, cavalry or infantry give equal results to the same amount spent as aircraft. The hardened head of any department head is to cut his appropriations. When those who supervise the allocations of the army budget look a vision of naval warfare or see fruitless of its development, the question of comparative economy becomes involved.

Economy has been the keynote of President Harding's administration. It is the policy of all nations now. Aircraft development should be considered from this viewpoint alone. Premier Baldwin has announced that "In conformity with our obligations under the Covenant of the League of Nations, the British Government would gladly accede to other Countries in limiting the strength of air armaments on basis similar to the Treaty of Washington in case of the navy; and such such arrangement, it is needless to say, will govern the policy of air extension."

Of course, from the standpoint of policies, it would be a great leap to see any nation the propensity of spending appropriations for aerial defense. Yet, until statements are written to discuss the limitation of the use of standing armies and the amount of military stores the nations are accumulating, it appears to be in every passing a subtle screen to lay such road blocks to comparisons in aircraft.

When money is spent for military or naval equipment, it seldom solo commercial development. With aircraft it is different. The great advance in speed, altitude, duration and power in airplanes while due to a desire to excel in the air, has made commercial aviation more popular. Until more money was spent on developing airdromes transportation. The entire amount of the appropriations for aircraft, while primarily for national defense, will be well spent if it advances the day when the advantages of air transport will be available to the entire country.

These facts cannot be too often reiterated. Economy of aerial warfare is certain to become a subject of wide discussion. Already attempts have been made to compare the cost of surface aviation with the cost of a fleet of warships, but these statistical discussions will not budge the fundamental issue. The public, informed as to the comparative economy and efficiency of aircraft, and noting the remarkable growth of Europe's established commercial air services, will look with encouraging approval upon adequate American Air Force.

by the Workers and Citizens of Odessa is worth quoting in this connection: "The voluntary air fleet in the most secret guarantee of the integrity of the Republic and its safeguard against external aggression. Every surplus power must withdraw from the air armament of the Soviet Union. We demand that our air force be built up in the most rapid manner, that our army and our navy, and open up large possibilities from the viewpoint of commerce by accelerating communications between the most distant sections of the country."

Said more recently, when Russia was trying diplomatic difficulties with the British Empire: "War Minister Tedder and I agreed upon an ultimatum. If we were presented with an ultimatum, let us protest a squadron of airplanes. If a coup d'etat occurs in Bulgaria, let us form another airplane squadron; and if there is a coup d'etat in France, let us build more airplanes." Under the same date, the *New York World* reported that one German airplane company operating in Russia, Junkers, is to receive a contract to supply 1,000 aircraft and 500 engines. In April, 1934, of which number 500 are said to be intended for use by the Turkish government to offset British air power in Mesopotamia and in India. That Russia has for some time past been making up of German engineers and military talent for building up a powerful air force has repeatedly been claimed by French observers. That the British are also engaged in similar efforts is evident when they turn their backs to French planes and mercenaries to make the more speedily. Certainly enough, British air crews seem steadily disinterested in Russia's great aircraft armaments, but all these空中 apparently finding no source in the use of the French air force. Whether this attitude is merely sheer nosebaggage remains to be seen.

It is not possible, however, that the French air force is regarded only as the means to Russian peace, words for the purpose of putting the British public under the British air power is already visible to protect the integrity of the British Empire, and that air power still has to take a large percentage of the duties now devolving upon the British navy. In an article entitled "Russia's New Air Fleet," the Daily Telegraph, London, June 1, 1933, quotes the British Ambassador W. F. Butler: "We [England] certainly say some prominent Germans on this subject. He writes: "Air power did not appear at Berlin. As a small air unit, his only records developed today it dominates in aerial warfare. But progress is absolutely dependent upon air power. It can be successfully secured only through the medium of air power."

It is clear, then, that Russia in a few years will be synonymous with world power, just as air power was in the past, seems to offer the real answer to the British anxiety at the use of the forces of war. The following extracts of London newspaper reflect various expressions of opinion on the question:

The British Viewpoint

Commenting on the creation of the Soviet Air Force the Duke of London says: "It's evident if we want control over addition to the maintenance of culture. It is, in effect, if not professedly so, an attempt in preparation for the next war. None but a fool will believe now that when we add to our armaments we are increasing the chances of peace. The key to the situation is France. France is pulling up her air forces in an unusual way. At the end of 1932 she will have 1,000 modern planes. And, as far as the war armament factor being concerned, it cannot be denied Germany, since Germany has been dissolved. She may protest as much as she pleases, but where Germany has been wiped out there only remains England as a possible foe."

"It is the duty of the Government to take notice of that opinion and it is most plausibly arguable that the only practical course is to follow the way it has chosen. The argument has been made with France."

The Daily Chronicle says: "British cannot be safe on less than a one power standard of air force. Every day's development makes it more certain that the next Armageddon, if there is one, will be decided almost wholly at the air. Britain is peculiarly vulnerable in air warfare which has deprived her of her mobility, and any power which can march her in that element as a truly mobile is likely to be regarded seriously."

The Times says: "A man in my judgment, however,

instance, Great Britain and France, in my judgment of Russia and her possible fleet of 30,000 airplanes, would be forced to accept the same standard of air force as that of other countries unless there could be equality. We believe that our own would be held just as strongly as France or as Great Britain, were our ally as maintained, as some day let us hope she might be, her eastern neighbor can be made strong by some strong alliance among the three nations."

The Morning Post says: "Some of the most ardent champions of the British Empire War Ministry, Tedder and his associates, are silent on what they are doing. They are preoccupied with the welfare of their defense air armaments, have limited their interests on the expansion of the French air armaments. The air forces of our ally, however, have at this juncture the danger of minor conflict, small developments beyond the Rhine and the necessity of having at the disposal of France a force sufficiently powerful to bring England to heel."

The Washington Observer says: "We cannot close our eyes to the fact that we are embarked, despite the wishes of an overwhelming majority of the people, on a new competition in armaments. Premier Baldwin's statement only went to confirm the conviction that he has been forced to adopt the present policy."

In their short issue, with every nation under the heading of "air armament," reflecting concern of others as to how to meet the more speedily. Curiously enough, British air crews seem steadily disinterested in Russia's great aircraft armaments, but all these空中 apparently finding no source in the use of the French air force. Whether this attitude is merely sheer nosebaggage remains to be seen.

After the opinion of the English press, it is interesting to hear the French viewpoint of the question. Edwin L. Jones, a sympathetic cable to the New York Times, writes on 16 June from Paris under June 21: "Paris reserves kindly and cordially from Minister Baldwin's proposal for limitation of air armaments or laws similar to the treaty of Washington in the case of the navy. But competent observers here say



From Red Air Fleet Magazine (Moscow).

The drawing above depicts the Red Air Fleet. Below, another caricature showing Leon Trotsky surrounded by various aircraft.

now, France made warships for all the allies because that was how she could best serve the common cause."

"Please do not forget, with her battleship lineage and her tradition of naval warfare, that when, in a moment of sudden Frenchness present, decided this common rule should apply to us."

"Now it is proposed to limit air strength. If the Washington rule was good for battleships, let it apply also to aeroplanes. Let the world see who rules when it is. This time it is not America and England but France which has the ad-

vice 120 and 30 million francs, respectively, but upon minuscule of the Under-Secretary for Air a total aggregate of 175 million francs was approved. The further addition of the Chamber of Deputies with the approval of the Finance Committee, which was subsequently appropriated for the French air forces and as it was further decided that this year's budget would also apply to 1934, the French aircraft industry has a two-year financial program ahead of it and realization of any such measure would not be complete if it did not receive the maximum amount of the annual aggregate of the Great Powers. This amounts to \$1,750,000,000, giving the air force appropriations of the Great Powers for the fiscal year 1933-34, except in the case of France, where the figures apply to the calendar year 1933. The table gives the annual aggregate amounts both in the national currency and in their equivalent in dollars. The United States currency at the rate of exchange of May 3, 1933, indicates that this table that the British air armament which does not include Premier Baldwin's proposed additional of thirty-five million francs—say, nearly four times those of France, and about three times those of the United States, while the French air armament are approximately one-half those of the United States. These statistics are, however, somewhat misleading, similar as the exchange values of the European currencies now under par are not equivalent to their purchasing value at home. In other words, while 100,000 French francs are at par with 100 dollars, 100,000 francs in the United States, their purchasing value is 100 dollars much more, probably twice that amount. At the same time, however, the materials are much cheaper in France than in this country, so that the French weapons cost much less to build than American machines.

TABLE V. CURRENT AIR FORCE BUDGETS OF GREAT POWERS

Country	Amount appropriated	U. S. Exchange value
United States	\$15,000,000	\$15,000,000
England	£2,000,000,000	100,000,000
France	175,000,000	100,000,000
Germany	100,000,000	100,000,000
Total	\$1,750,000,000	\$1,750,000,000

(End) \$1,750,000,000 for each nation.

But all of this does not detract of the enormous losses of the British air force budget, which it is now proposed further to increase. As the postal service is now almost at par, the money appropriated for the Royal Air Force is actually about the same as that allocated for our own air services. And yet the British Air Force is only partly air armament air squadrons to show against our fortifications. An application for the necessary amount may be had from the Air Staff out of the 175,000,000 appropriated for the Royal Air Force only £10,000,000 or less than one-fifth is provided for actual combat aircraft and armament. The rest of the British air forces are largely economy measures, the money is spent upon our flying schools which the British Air Ministry maintains for training large numbers of pilots, observers, bombardiers, gunners, navigators, mechanics and riggers with a view to a large and general expansion of the air force in case of war. By contrast, the American air armament budget is much greater, amounts such as the Royal Aircraft Establishment at Farnborough and the Airspeed Experimental Establishment at Martlesham Heath, mostly of these schools, the sum of which follows:

RAF SCHOOLS

Colditz Flying School, Duxford.
Flying Training School (two).
Central Flying School, Leiston-Sudell.
Air Warfare School, Andover.
Armament and Gunnery School, Farnborough.
Electrical and Wireless School, Winchester.
School of Photography, South Farnborough.
Night Flying School, Tiverton, Devonshire.
School of Army Cooperation, Belsham.
School of Naval Cooperation and Aerial Navigation, Calshot.
RAF Cadet College, Cranwell.
Fleet School of Technical Training (Bapt.), Halesowen.
Royal School of Technical Training (Mech.), Bognor Regis.
RAF School, Andover, India.

various. Don't we deserve to profit by it? Americans spend money to build battleships and then find myself England who uses it was vastly inferior. France has spent money to build armaments, and we should be reaping the benefit of her experience. There is so much ground in our contention as Mr. Hughes's invitation of battleships?"

That is the French case. They do not believe there ideas will be accepted by England, but they say they certainly will not stand aside. England's interests, then, will then propose the same in terms of cutting strength.

To conclude: "There is no other case in armaments with attention focused today on an area which is the next sufferer will be a decisive area. There may be an agreement to prevent this meeting. Mr. Baldwin referred to it yesterday. He said that it should be on the basis of the Washington treaty. If that is done, France will have the right of a great air power as she was forced to lose her right as a great sea power, the French people would never submit."

The Matter of Appropriations

The first apparent result of Premier Baldwin's announced decision to increase the strength of the Royal Air Force came two days later, when the French Chamber of Deputies voted the air force budget for the current year to 215 million francs. As originally presented to the Chamber, the budget called for a total expenditure of 232 million francs, namely, 181 million for the French air service, and 26 millions for the naval air service. The Senate wanted to reduce these figures

It will be seen from the data given in this article that if our own air force remains stationary, Great Britain's and Italy's authorized and contemplated air programs will write the next two years make the United States rank fourth or second among the world's air powers. If, furthermore, Japanese air power continues to expand, as may reasonably be expected, on the strength of the documents presented by the Japanese, then the United States will no longer be ranked dead last among at the last end of the world's great air powers.

Our Own Situation

In view of the fact, which has often been stressed in these columns, that air power is the most effective and the most economical way of maintaining national security, it is important to re-emphasize without grave misgivings. While it is not suggested that this country's military is a competitive building program with France and Great Britain, it is essential for our national security that we have in peace time an air force sufficiently strong to equal those which possible enemy states could have within striking distance of the continental United States as well as the near-continent powers.

The importance of this military situation is, with one exception, clearly a question of our power abroad. The exception is Alaska, where it is only separated by a 90-mile stretch of water from the Asian mainland and which affords the easiest approach to the United States from the West. And Alaska, which would suffer in invading our fleet a considerable staging point for land and seagoing and mountainous supply lines, is approached by sea only. Power and a single air squadron, military or naval, is needed in Alaska today.

With this exception in mind, the problem of national air defense is to prevent the approach to the United States of a screened fleet of aircraft carriers which could transport itself within striking distance of the American coast. Such a fleet equipped with bombers and pursuit planes, sans all striking distance of the American coast, could destroy New York, Washington, and other important centers of the manufacturing heart of the United States within a few hours. In these circumstances, even the capital of Washington would not be safe.

The problem, as the Joint Army and Navy Aeronautical Board sees it, is to meet such an attacking fleet either in the middle Atlantic or on the other side, and never permit it to reach American waters. Our ability to meet such an attack will undoubtedly depend on the number of aircraft we can carry to sea, which is a question of aircraft and aircraft carriers.

Plans of the Joint Board

According to the New York World, the Joint Board is considering a series of building programs which will meet these requirements. These two series, when added together, will be required by experience to give a minimum of safety factors to be made within detailed knowledge of the particular. The series may also be used to estimate the improvement in efficiency due to reduction, gearing, or to judge the performance of a new propeller design.

A copy of Report No. 148 may be obtained upon request from the National Advisory Committee for Aeronautics, Washington, D. C.

Flying Model of Fokker T2

The Model Aero Engineering Co., of 1999 South 56th St., Philadelphia, has just brought out an excellent flying model of the famous U. S. Army transport monoplane T2 built by Lieutenant Kelly and MacMurry made their notable non-stop flight from New York to San Diego. The flying model consists of the fuselage, the tailplane and landing gear, being transformed into monoplane. This will give the American Flyer a total of approximately 60,000 to 70,000 tons, as compared with the 20,000 allotted the United States under the naval treaty. French and British aerial carrier equipment is negligible, the English already having 87,000 tons in construction and it bringing its equipment up to the limit allowed by the Washington Conference agreement.

Japan has only some 9,000 tons in construction, but will have two carriers in commission at the end of the year,

each of 20,000 tons, bringing the Japanese total apparently up to that of the United States.

Set the serial defense of the United States should not entirely rest upon aircraft carried to sea in ships, for the latter are highly vulnerable to torpedo and bombing attacks. It is particularly true of aerial carriers. Not only do they carry aircraft and air power instead of oil, but they are not self-propelled, but depend entirely on an engine or turbine to that of capital ships that sustain bombs and keep those could do great damage among them.

Hence, behind the first line of defense represented by the air force, should we still maintain a second line of defense, one of flying squadrons formed and based on land. Flying squadrons are more easily in training, and, for our purposes, efficient land air power instead of oil can be had at Laundry Field, Va., on Pickett Creek near Detroit, and our Attack Group over Mexico border. This makes a total of only twelve air squadrons, or 144 airplanes.

It is believed that when Congress reconvenes on Dec. 1st, it will realize the paramount importance of giving the United States the air force it requires for national defense, and that it will appropriate the necessary money to make this an unassailable front from the air.

General Efficiency Curve for Propellers

NACA, Report No. 168

Report No. 148 of the National Advisory Committee for Aeronautics by Walker S. Bird, is a study of propeller efficiency, based on the equation:

$$\eta = \frac{C}{F} \cos(\theta) \sin(\psi + \gamma)$$

where:

F = speed of advance.

ψ = revolution per unit of time.

D = diameter of the helix descended by the particular element under consideration.

$$\frac{D}{F} = \tan^2 \left(\frac{\pi}{2} - \frac{\theta}{2} \right)$$

and

$$\gamma = \tan^{-1} \frac{D}{F}$$

It is shown that this formula, may be used to obtain a "general efficiency curve" in addition to the well-known constant efficiency curves. These two curves, when added together, will give a minimum of safety factors to be made within detailed knowledge of the propeller. The curves may also be used to estimate the improvement in efficiency due to reduction, gearing, or to judge the performance of a new propeller design.

A copy of Report No. 148 may be obtained upon request from the National Advisory Committee for Aeronautics, Washington, D. C.

Results of the National Balloon Race

Army Balloon Piloted by Lieut. J. W. Shoptaw, Probable Winner
H. E. Honeywell Gains Second Place

The 14th National Balloon Race, conducted under the rules of the Indianapolis Chamber of Commerce with the sanction of the National Aerostatic Association, which was started July 4 from the Indianapolis Motor Speedway, was apparently won by the Army balloons. Lt. Ernest R. Oberland, pilot; Lt. Ernest J. W. Shoptaw, pilot, who landed at Marion, Ind., with probable altitude 10,000 feet, and Lt. H. E. Honeywell, pilot, and P. J. McCullough, radio, who recovered 400 miles from Rosedale, N. Y. The third place has not yet been determined as three entries covered an approximate distance of 500 miles each, all of whom landed in Pennsylvania, and contestants discontinued trouble from early gas leakages.

Lieut. Oberland had to make a landing near Dyersburg, Okla., after he discovered that his radio did not function. The pilot and his side companion freed the balloon, when it touched ground and was slightly fractured, while the gas bag escaped with their entire outfit, which was recovered, and food.

Lieut. T. E. Green, Jr., and H. V. Thaddeus, in the City of Al, were forced down by a leak in the gas bag at Marion, Mo., the starting place, while Eddie Upson and C. D. Anderson, a pedantic landing near Wapakoneta, Ohio, after the failure of their balloon, the Detroit had considerably repaired. Eddie Hause, withdrawn from the race owing to a leaky gas bag took off after the early balloons, and landed near Aransas, Ind., 35 miles from Indianapolis.

Where the Contests Landed

- 1 Having are the preliminary results of the race, with the time of start of the contestants and their landing places.
- 2 Army Lt. E. B. Oberland, pilot; Lt. J. W. Shoptaw, pilot, landed Marion, Ind., 10,000 feet.
- 3 City of Al, W. T. Van Dorn, pilot, H. V. Thaddeus, radio, landed Marion, Ind., 10,000 feet.
- 4 Lt. Ernest H. E. Honeywell, pilot; P. J. McCullough, radio, landed Marion, N. Y., 450 miles.
- 5 American Express, Capt. C. E. McCullough, pilot; Lt. C. B. Bush, radio, landed Franklin Springs, Ga., 10,000 feet.
- 6 New Jersey, Lt. J. Lawrence, pilot; Lt. F. W. Binkley, radio, landed Glass Campbell, Pa., 400 miles.
- 7 Goodyear Lt. J. A. Stebbins, pilot; J. M. Tolson, radio, landed Freeport, Okla., 500 miles.
- 8 General Radio Co., Lt. W. E. Doherty, pilot; Lt. B. H. Smith, radio, landed Lake Erie, Port Huron, Mich., 10,000 feet.
- 9 Army Air Service Lt. C. E. Northcutt, pilot; Lt. J. B. Anderson, radio, landed Mount Hope, Ohio, 1000 miles.
- 10 City of Springfield, Capt. E. D. Donisthorpe, pilot; Lt. A. K. Evans, radio, landed 50 miles from Marion, Ind., 10,000 feet.
- 11 Lt. Capt. S. T. Miller, pilot; Lt. C. M. Brown, radio, landed Toledo, Ohio, 1000 miles.
- 12 Very Arctic, Lt. E. B. Calvert, pilot; Lt. D. T. Quinn, radio, landed Atlanta, Ohio, 210 miles.
- 13 Army Lt. J. B. Jordan, pilot; M. F. Meyer, radio, landed Macon, Ga., 250 miles.

The crew of the Harry Avery #4055, Lieut. L. J. Bush, pilot, and Lt. E. B. Hall, radio, has not yet been ascended for all the time of going to pieces, and it is feared that they may never be found. The balloon, which had a 25 mile S.E. of Port Huron, Mich., and landed in the interior. In the bottom of the bag there were the uniforms of the crew together with food, chains and the big hook. As the supporting ropes of the basket were found cut, the assumption is that the aeronauts are lost from the gas bag as being forced down to Lake Erie. The appendix of the bag was also found clashed about

the basket from the end, done with an apparent endeavor to get the gas out as the last strung the wires. Officers at the naval air station, Lakeside, N. Y., to which the two naval men were attached, hope that whenever the basket of the Navy balloons are almost undisable, the two men may yet yet be found.

All of the balloons' baskets were equipped with life preservers, which the basket of the balloons, as noted, was fastened to the outside of the basket and would not have been cut off to lighten the balloon except in a very dire emergency over land, and evidently not by men who knew they were approaching water.

The basket, of very light wicker construction, and had with canvas, which under ordinary circumstances would hold 1000 pounds, but when the basket of the balloon leaked the pressure, filled with a material called "Kapton," instead of cork, would support the basket and its occupants. The man being of the basket is gravely injured with pockets. It was explained that the clothing found in the wings of the vessel envelope may have been placed there by the aeronauts before the upper and lower envelopes were torn off. It is estimated that flying at low altitude is lessens the chances of the basket bursting by deflating the flying囊.

Search for the Navy Balloons

Two D.H.4s and a Leasing Air Yacht of the Army Air Service, from Selfridge Field, and the flying boat Nills and Buckey of the Aeromarine Airways together with numbers of naval aviators and naval officers are engaged in a concerted search of Lake Erie or near on the Navy balloons.

The Nills piloted by G. E. Ruster, Cleveland manager of the company and G. Richards of Akron took a northeast course sighting the Canadian shore about ten miles west of Point Abino, an hour after sunrise. Starting about 1000 feet in a rigid position about ten minutes, the crew were able to descend and land without powdered glasses to Port Stanley, Ont., approximately 50 miles, without a trace of the missing balloons or the balloon basket. The Nills landed at Port Stanley and a further examination of the balloons has disclosed that several of the ropes that held the basket to the bag showed evidence of having broken under terrific strain.

After a short stay the Nills left Port Stanley, flying in an easterly-southerly direction for a south of the American shore and the mouth of the lake. The American shore was sighted about noon, the crew were able to descend and land without powdered glasses to Port Huron, Mich., 10,000 feet, without a trace of the missing pilots or the basket.

Finally, on July 8, a flying boat found the missing basket with the body of Lieutenant Bush strapped to it, but no trace of Lieutenant Hall was found. It is believed that Lieutenant Bush died of exposure after being caught in the terrible storm which swept Lake Erie on July 5.

Wright T2 Engine Passes 50 hr. Test

The first Wright T2 production engine recently passed a most successful 50 hr. test, as required by Navy specification E-40. This specification requires that at least 100 hr. of the engine be run at the rated power of the engine, which is considerably more severe than the old test.

It is now being gratifying to note that the first production model of the T2 engine has selected for Navy service work, gas through the fifty hours without increasing any engine adjustment whatever. The power at the end of the test was practically the same as at the beginning, and the final organization averaged 4.642 lb. per horsepower hour for the entire run.

A Visit to the Logging Plant

Situated in the heart of Manhattan Island, almost midway between the two great railroad terminals of the Pennsylvania and New York Central, is the new plant of the Loesing Automatic Engineering Corporation.

The factory, which is said to feature go, comprises the vendor with its up-to-dateness and with the way everything has been carefully planned out so that there is no lost space. The plant is housed in a specially constructed brick and steel building at the foot of East 31st Street. Special doors have been provided at the entry end which, when opened, give a clear space of 46 ft. 6 in. width and 30 ft. 6 in. height.



Parts of the engine of the giant of the Leasing Association Engineering Corp., at 31st St. and East River, New York City. Several Leasing Air Yachts are shown in different stages of assembly. Note engine boat, on the right, leading from the enclosed dock, in the lower right.

noting the Air Yacht, for which the company is rapidly building up a good reputation, to be brought out of the factory and launched in the East River one hundred feet

The main floor houses the wing shop, metal and woodworking departments and assembly hall. On the second floor, below the office and drafting room, is a complete motor assembly shop, to which by means of today's and tomorrow's freight cars, raw materials may be taken out or installed in planes without touching the ground.

The accompanying illustration shows work as Loring Air Force Base is to be when going on at present. The light of the factory, it will be seen, is rapidly growing, sky-lighting, illuminating the whole northern and southern walls. Eight of these flying boats have been built for the Army Air Service, which will use them for aerial communication work between Army posts in the Island Passages off the four lighthouses Air Tanks, which will constitute the heart of the New York Harbor Air Service, Inc., three have been completed, while the remaining two are being rendered

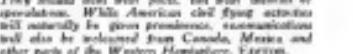
Our Growing Footprint

It is learned from the Department of the Interior that petroleum statistics of the country, in the tremendous effort to develop new fields for the nation's millions of scattered consumers, registers, yesterday, growth in the rate of 56,634,756 gal per day during the month of April, setting a new high record rate of daily production in the industry. The nation's stock of gasoline May 1 amounted to 12,556,497,461 gal, showing a new high mark, and which exceeds by 17,000,000 gal the figures for April 1, which had already registered a record.

Military Aviation in Mexico

The establishment of an independent air department is being considered by the Mexican Department of War and Marine. A bill to this effect which is to be introduced in the Mexican Congress anti-impediment, is being studied by the military authorities, and it is stated that President Obregon

At the present time the Marianas Air Force depends upon the Department of War and Marine. Its main establishment is at Yakkuma, near Marovo City, where fairly large & up-to-date equipment imported from the United States are maintained.



This Department is concerned with all civil flying activities such as the establishment of airports, the meeting of airports, measures to airmen regarding airmen, experience gathered in flying routes and landing fields, the work of commercial aviation companies and private firms, the formation of new air transport enterprises, personnel paragraphs of general interest, etc.

Chicago Notes
John C. Dugan, formerly head of the Ralph C. Duggan firm, has consolidated with the James Levy Aircraft Co., Chicago, is now Vice President of the Chicago Air Corp., and is in active charge of the latter's home study

Fring Field and office at the Chicago Air Park Co. is at 5100 Street and 46th Avenue, Chicago, where it is a substantial residence on a street car line to the edge. It comprises the erection of houses 12 to 36 ft. long, three story houses, a shop building and separate business offices.

The company is conducting a general aviation business includes flying instruction, passenger carrying, special delivery service, aerial photography and mapping. The company has 100 acres with several hundred acres of open air approaches.

The facilities include a 1000 ft. long safety runway.

Aviation Club of Chicago recently held two meetings to discuss a uniform set of rules for passenger carrying by planes. Some fliers are asking \$5 for a short "hop,"

[...] others still stick in the old 89 rate.
[...] those who have reduced their rates claim that they are getting more trade, thus making up the loss and at the same time making aviation more popular. Those still using 89 claim they have to do it because they lose too much time in taking off and landing, and is making as many extra trips increase the risk of breakdown and waste.

At the annual meeting of the Aviation Club of Chicago, which will be held the latter part of July, the question will be voted on as whether Henry Ford, if elected president, will make the United States fleet as big as the air.

Critics Shepherd, who was on a skywriting tour of the neighboring states, has returned to Arkansas Field from Dayton to resume skywriting activities at Chicago. The Skywriting Corp. of Arkansas has added a new ship to its equipment, also new concepts of fun, pleasure.

South Atlantic Aviation Lines

The Repubblica comunista's article has which Spanish and South American capitals prepared to organize with German and Italian capital, and presented a rapidly mounting realization. The financial progress of the company which has recently been made public in Madrid, provides for the following expenditures: 1,416 million pesetas for the airport at Seville, Spain; 1,245 millions for the shipyard at Bilbao, Asturias, including all installations, 11 million for the shipyards Seville, for the building of Spanish, 9.5 million for the shipyards of Valencia, 1.2 million for the shipyards of Cadiz and 1.2 million for a launching shed which will be built in Bremen, Arras. The total expenditure contemplated is 75 million pesetas, or approximately 115,000,000.

"Jewell Bay" Defeated

The so-called "Swett bill," introduced by State Senator Joe F. Swett in the Illinois Legislature, providing double-removals for pilots operating commercial aircraft, has been withdrawn after several members from all Chicago bars



Miranda Peleg, who recently study on unofficial women

New England Airways

The movement to establish a network of airways throughout New England has gained further impetus with the appointment of six leaders in the promotion of commercial and military aviation in service on the Boston Chamber of Commerce committee which is developing the New England airway project. All six are present-day or former life of Boston. Three of them served as pilots of American airlines during the World War.

As announced by the director of the Chamber, the appointees are: Col. E. S. Corriveau of the Marcus Boston Co., chairman; Foster H. Adams, engineer, George Brewster of Boston; Lt. Col. Yvonne L. T. Clegg, president and general manager of the Massachusetts National Bank; Lt. Colonel Harry Hinsdale of Knobell, Hinsdale Co.; and James T. Williams, Jr., editor of the Boston Transcript. They have all rendered previous service to the Chamber in the promotion of aviation and other activities.

Colonel Corriveau, a West Pointer and a graduate of Massachusetts Institute of Technology, with whom James worked in the Army, became an aviator in 1904, when he was detached from his duties in the Aviation Bureau, U. S. A. He was one of the aviators who won the Macmillan air racing prize in 1916. During the World War he served as chief of staff for the air service of the A. E. F., and was one of the first to receive the Distinguished Service Medal. The Bureau B-20 and the crew at the time of his award were the second and third winners of the Macmillan Air Races. He is a graduate of Moulton's Institute of Aeronautical Engineering, and is technical manager of the Nashville Shipyards Co. and President of the Mormon Hostos Co.

Foster H. Adams, the organizer was also a pilot before the war. During the war he was an engineer in the Naval Aircraft Factory, and later in the Naval Intelligence office of Chelsea, where he was later made to the rank of captain. He is a graduate of Massachusetts Institute of Technology. He is vice-president, from the New England district, of the National Aeronautical Association, and a member of the executive committee of that organization.

The third member of the committee is Harry Hinsdale, who was born in Novia Scotia during the war. He is now in the business of aircraft maintenance, and has been one of the most active members of the Chamber.

George Brewster Baker and W. Irving Bedford, although not pilots, have done considerable flying as passengers, and are both interested in racing from the human point of view. The other member of the committee, James T. Williams, Jr., is a son of the Boston newspaperman. He also has a great deal of flying in a passenger plane, and has been a enthusiastic supporter of the development of aviation. He was one of the leaders in the campaign for the establishment of the Boston airport.

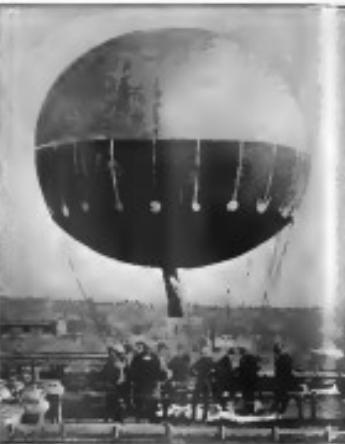
With fully developed, New England airways will connect Boston with the other business and industrial sections of New England with cities with the same needs. Airways which link Boston to London, will connect the following cities to Albany, N. Y.: Boston to Bangor, Me.; Boston to Portland, N. H.; Boston to Springfield, Vt.; to Hartford, Vt., and Boston to New York.

Brockville Field, St. Joseph, Mo.

Kennecott Field, the new municipal airport of St. Joseph, Mo. is associated with International Airlines Corporation. New Field will interest U. S. chamber members, which supports the word "St. Joseph." It has a landing circle 160 ft. in diameter, showing perfect landing spot located in the center of the field. The field is fully equipped on all necessary requirements, can be approached from any direction and would take approximately 10 minutes to fly to the landing circle.

In connection with the Army Air Service, which will be held in the latter part of August, the Chamber of Commerce of St. Joseph is planning to have government planes from St. Joseph to assist cities and so demonstrate the high speed of modern transportation as well as the importance of the Air Service in national defense.

As will be recalled, Brigadier General Marshall, Assistant Chief of Air Service, stated sometime ago that an air fleet mobilized



A "flying balloon" of 5000 m. sq. ft. the Kitekite, before it starts from a Detroit office building. Note the interesting conical-shaped base and patch wings.

in the center of the United States could effectively dash any point on the coast east line of the country by its ability to reach any given point within 15 hr. General Marshall has based his statement on the recent exploit of Lieutenant Clegg—1400 m. nonstop flight—when the distance was covered in 12 hr.

Joseph's basic premise is that the cost of a 1500 mile radius, it would embrace every port in the country, and have the advantage of the longest distance being to the West and the Northwest on account of a difference in time. This position would also give the benefit of longer daylight which could be drawn with our present ships, affording a wider demonstration in the public of the practicability of such a distance.

Manchester-London Air Service

It is estimated that the air service between Manchester and London will be available to the public in twelve months, according to make it a paying venture. One of the reasons given for this lack of support from the traveling public is that the air stations lie outside the cities—in the case of London, nearly 10 miles from the business centers—whereas ordinary stations are situated to the business districts. All flights between Manchester and London, however, are about 2 hrs. less than the time required for distance—14 hr. 4 hrs., the savings in time is negligible when allowance is made for the time required to get to and from the air stations.

France to Tunisian Air Service

The Airships-Airways-Capital-Sabena-Tacna air service, connecting France and Tunis via Corsica and Barbados, is to be opened in July, according to the vice-president of the French Aeronautical League. An air line joining France and Tunis is also planned.

U. S. ARMY AND NAVY AIR FORCES

U. S. ARMY AIR SERVICE

New Endurance Attempt

Capt. Lowell H. Smith, A. S., and First Lieut. J. R. Foster, Jr. on June 28 attempted to establish a new world's day record by remaining aloft four days. Their engine, the 100-hp. Pratt & Whitney, had failed on June 27, so that the two aviators had to abandon their attempt. After flying 100 miles in 10 hours, they had to land. They had to make another stop placed by Lieutenant Hines and returning to Camp Swift, as elsewhere, it was proposed to deliver to Captain Smith fuel in 50 gal. cans. But not several attempts to make contact between the two ships only one was successful, when the fuel was delivered to the aviators. After the second attempt, Lt. Foster and Capt. Smith and Lieutenant Hines remained up 24 hr. 8 min. and were eventually forced down by a heavy fog and lack of fuel.

When the aviators had left the fog they stopped their engines when they had 600 ft. altitude, and a skilled observer, to my knowledge, of short distance, they reluctantly thought that by doing so they would be able to use their way and still continue the flight. In attempting to show they were forced down into shadow waters of that Dodge 100, 6,000 ft. w.s., on June 28, when the plane moved over water, they experienced a violent jolt. Two days later, the aviators had covered throughout a nonstop night. It was their second unsuccessful attempt within two days to remain in the air long enough to break all records recorded. Wednesday they made their first start, but the morning out of a generator forced them down in less than 100 ft. Smith and Foster landed at least one record, did not spend over 2,000 kilometers, and are believed to have broken the record for speed over 3,000 kilometers.

Particulars for World Flight

First Lieut. Gifford Nutt and Charles E. Carpenter, A. S., have been selected to proceed on a "path-finding trip" for the purpose of gathering data in connection with a proposed flight from the United States to Europe. Both aviators are experienced military pilots and were members of the flying squadron from New York to Nome, Alaska, and return, in 1929, headed by Capt. W. C. Bennett.

The manager of Louisville Courier, who was once chairman of the Air Service Engineering Division at McCook Field, is to travel from United States to Europe via the British Isles, to Greenland, thence to the British Isles, thence to Iceland, thence to the British Isles, thence to France, Italy and return, through France and the British Isles to Canada, thence to the United States.

Charles E. Carpenter, who is now serving a brief duty in the Philip Jones Islands, is preparing to fly there to Japan, thence to the Karlie Islands, in the Amakiri Islands, to Alaska, thence over the same route.

These two officers will gather data for a report on leading difficulties, weather conditions, and other pertinent data in the proposed route. Nutt, it is expected will path-finding first, and will be accompanied until the end of the summer after which Carpenter will be given to detect place for the proposed flight around the world.

Memorial to Lost Airmen

General Orders of the War Department, recently issued, announced that the United States Army Aerobase at Fort Riley was designated "Marshall Field" in honor of Col. Francis C. Marshall, Cavalry, who lost his life in December, 1922, while en route between San Diego, Calif., and Nagoya, Japan.

Colonel Marshall was a passenger in a plane piloted by Lieut. C. L. Webber, A. S. They left Rockwell Field on Dec. 2 last, and for a stretch of nearly six weeks had not been heard from. All efforts to locate the lost fliers proved fruitless, and when the aviators had been declared missing, it was considered a solved mystery, when word was received at Rockwell Field on May 15, that the plane had been found by a citizen or series of three stray cattle in the Cimarron Mountains. Major Arnold immediately dispatched a detachment of officers, consisting of Captain Kevin, Lieutenant Smith, Adjts. Siegel, Butler and Rice, to that point. They determined that the aviators had been killed, and the remains of Colonel Marshall and Lieutenant Webber, who were buried over a local undertaking establishment.

On May 16 the entire force at Rockwell escorted the bodies from the funeral parlors to the 7-39 train to take to their last resting place. Lt. C. P. Rockwell, A. S., who was Lieutenant Marshall's adjt, and Adjts. Siegel, Butler and Rice, who were with him, were reinterred, back to the very spot that death had struck in December and January, following every clue which was given, accompanied by his body in Denver. The remains of Colonel Marshall were transferred in another train to Los Angeles, and in compliance with the request of Mrs. Marshall were sent in荣光 by the Calvary's former commander de camp during the winter months and interred in Washington, D. C. where a suitable service was made in Arlington Cemetery.

On Sunday, May 20, about 180 members of the Rockwell Air Intermediate Depot, equipped with picks, shovels, rakes and sand, drove to the mountain, and leaving the road at a point five miles from Cimarron Lake, climbed to the spot where the crashed plane lay and buried the regiments in a solid wall. The ground being a rocky soil, it was difficult to mark the spot where one of the most loved officers of the Air Service had lost his last battle. The tablet was cast at the Rockwell Air Intermediate Depot and bears the following inscription:

I N M E M O Y

of
Col. F. C. Marshall, Cav.
and
Lieut. C. L. Webber, A. S.

May 15, 1922

Dec. 7, 1922.

All material for the marker had to be carried up the rough mountain side, 150 miles and the initial effort caused the men to the drosho employees at the Depot for the comfort, while they took to working this over in such a way that even the most strenuous labor was not felt. A. S. and Adjts. Siegel, Butler and Rice, accompanied the men to the scene of the accident, comprising a copy of the San Diego News of May 15, which gave the final news of the lost airplane, also a copy of the San Diego News of May 20, giving the first account of the finding of the lost plane, a Marine Calendar for 1922, and a list of the Officers and warrant Officers on duty at Rockwell Field, also a list of all the employees of the Depot.

New Training Planes

Three new Army Air Service training planes of the T-22 type, on which the nose and the structure of side in side, having proven unsatisfactory after tests at McCook Field, are being replaced by the T-23, which is a single-seat monoplane built by the Curtiss Aeroplane and Motor Co. and the Boeing Aircraft Corp. The new ships will be ready in December as expected, and will be shipped to Myrtle Field, Tex., for training student aviators. Instruction in these new ships, designed by the Dayton-Wright Co., with side-by-side seats and one instrument board, is believed will facilitate flying instruction through better communication between instructor and pupil who were forced each other at the older training planes.

Orders in Officers

Lt. Amos T. Fellowes (DC) U.S.N.—Detached Naval Station, Guantanamo Bay, Cuba; to Naval Air Station, Lakeland, Fla.

Lt. Comdr. T. N. L. Bellinger, U.S.N.—Detached Aircraft Squadrons, Battle Fleet, to Aircraft Squadrons, Training Wing.

Lt. Harry F. Carlson, U.S.N.—Detached Aircraft Squadrons, Training Fleet, to Naval Air Station, Anacostia, D. C.

Lt. George Kirkland, U.S.N.—Detached U.S.S. Langley, to Naval Academy, Annapolis, Md.

Lt. William K. Patterson, U. S.N.—Detached Naval Air Station, Hampton Roads, Va., to Aircraft Squadrons, Training Fleet.

Lt. Van Robert Knobell, U.S.N.—Detached Naval Air Station, Pensacola, Fla., to Aircraft Squadrons, Battle Fleet.

Lt. Harold B. Baldwin, U.S.N.—Detached Aircraft Squadrons, Training Fleet, to Naval Air Station, Anacostia, Md.

Lt. John Stanley, U.S.N.—Detached Naval Air Station, San Diego, Calif., to Aircraft Squadrons, Battle Fleet.

Lt. Guy D. Townsend, U.S.N.—Detached U.S.S. Wright, to Naval Academy, Annapolis, Md.

Lt. Col. Franklin E. Cook, U.S.N.—Detached Naval Air Station, San Diego, Calif., to Aircraft Squadrons, Battle Fleet.

Lt. (2d) Corrington J. O'Connor, U.S.N.—Detached U.S.S. York, to Naval Air Station, San Diego, Calif.

Lt. (2d) Oliver B. Turner, U.S.N.—Detached Naval Air Station, San Diego, Calif., to Aircraft Squadrons, Battle Fleet.

Ens. Paul Carter, U.S.N.—Detached Naval Air Station, San Diego, Calif., to Aircraft Squadrons, Battle Fleet.

Lt. Comdr. Ernest M. Pace Jr., U.S.N.—Detached Naval Aircraft Factory, Philadelphia, Pa., to Bureau of Aeronautics, G. C. Williams, Philadelphia, Pa.

Mack Work, A. Steele, U.S.N.—Detached Naval Air Station, San Diego, Calif., to Aircraft Squadrons, Battle Fleet.

Lt. (2d) Otto B. Munro, U.S.N.—Detached U.S.S. Reuben James to Naval Air Station, Pensacola, Fla.

Lt. (2d) Edward E. Johnson, U.S.N.—Detached U.S.S. Arromanches, to Naval Academy, Annapolis, Md.

Lt. Col. Leo R. Knobell, U.S.N.—Detached U.S.S. Butler, to Naval Air Station, Pensacola, Fla.

Lt. Comdr. Henry F. D. Evans, U.S.N.—Detached U.S.S. Dickinson, to Naval Aircraft Factory, Philadelphia, Pa.

Lt. (2d) William H. McRae, U.S.N.—Detached U.S.S. Bogue, to Naval Air Station, Pensacola, Fla.

Lt. (2d) Maurice Van Cleave, U.S.N.—Detached U.S.S. Ship New York, N. Y., to Naval Air Station, Pensacola, Fla.

Lt. (2d) Bernhard H. Winter, U.S.N.—Detached U.S.S. Langley, to Bureau of Aeronautics, G. C. Williams, Philadelphia, Pa.

Lt. (2d) Edward F. D. Evans, U.S.N.—Detached U.S.S. Dickinson, to Naval Aircraft Factory, Philadelphia, Pa.

Lt. (2d) William H. McRae, U.S.N.—Detached U.S.S. Bogue, to Naval Air Station, Pensacola, Fla.

Lt. (2d) Edward G. Morley, U.S.N.—Detached Naval Aircraft Factory, Philadelphia, Pa., to Naval Air Station, Lakeland, Fla.

Tickets for Air Races
Prizes for the racing Pulitzer, Schneider Cup and International Balloon races will be awarded at the National Air Races in Cleveland on July 28. Lt. F. W. Wood and the pilots assigned to the Schneider Race team were relieved from all other duties, and commanded training for the race, which takes place in England on Sept. 25. Lt. Comdr. M. A. Milford has again been placed in charge of the Pulitzer Race team, and early in July will be in charge of the Schneider Race team.

The Bureau of Aeronautics has been given permission to enter its air races at St. Louis, Oct. 12.

Parades for Naval Aviators

Certificates of promotion may soon be expected from McCook Field for those in the aviation personnel of the Navy. In a recent report it was mentioned that it was made known that J. C. Coughlin of the Naval Air Station, Pensacola, Fla., had no objections to parades, well over a year of the various new naval stations and field bases of instruction in peninsular

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July 16, 1937

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